GenCore version 5.1.4_p5_4578

OM protein - protein search, using sw model

Run on: March 13, 2003, 08:30:55 ; Search time 36.5 Seconds
(without alignments)
91.268 Million cell updates/sec

Title: US-09-913-524-1
Perfect score: 143
Sequence: 1 PWSPSALRLLQRPPEEPAAHANCHR 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_101002:*
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22: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	143	100.0	32	22	AAB92074	Inhibin peptide SE
2	143	100.0	33	22	AAB92075	Inhibin peptide SE
3	143	100.0	134	9	AAP80018	Sequence of the 18
4	143	100.0	134	22	AAB68139	Amino acid sequenc
5	143	100.0	134	23	AAM51942	Human TGFbeta prot
6	143	100.0	351	8	AAP70202	Sequence of human
7	143	100.0	366	7	AAP60519	Sequence of human
8	143	100.0	366	9	AAP83167	Sequence of the 18
9	143	100.0	366	21	AAY92015	Human inhibin A al
10	135	94.4	33	12	AAR12087	N-terminal of 18 k
11	135	94.4	360	7	AAP60517	Sequence of bovine
12	131	91.6	32	22	AAB92078	Inhibin peptide SE
13	131	91.6	33	22	AAB92079	Inhibin peptide SE
14	131	91.6	134	8	AAP71175	First protein chai
15	131	91.6	364	8	AAP70310	Sequence of porcin
16	131	91.6	364	8	AAP70199	Sequence of porcin
17	110	76.9	122	22	AAB73201	Inhibin balpha C-t
18	108	75.5	29	9	AAP81907	N-terminal of inhi
19	103	72.0	28	22	AAM51686	PAM related peptid
20	100	69.9	26	23	AAU93966	Bovine inhibin alp
21	87	60.8	26	10	AAP91262	Inhibin 18 kD chai
22	80	55.9	14	22	AAB68144	Peptide derived fr
23	80	55.9	14	22	AAB68178	Peptide derived fr
24	76	53.1	14	22	AAB68142	Peptide derived fr
25	76	53.1	14	22	AAB68175	Peptide derived fr
26	73	51.0	14	22	AAB68176	Peptide derived fr
27	73	51.0	27	21	AAY52425	Inhibin portion of
28	73	51.0	28	21	AAY52426	Inhibin portion of
29	72	50.3	14	22	AAB68145	Peptide derived fr
30	72	50.3	14	22	AAB68179	Peptide derived fr
31	71	49.7	14	22	AAB68174	Peptide derived fr
32	70	49.0	14	22	AAB68143	Peptide derived fr
33	70	49.0	14	22	AAB68177	Peptide derived fr
34	61	42.7	101	18	AAW10029	Chicken alpha inhi
35	61	42.7	101	19	AAW61389	Chicken alpha-subu
36	59	41.3	14	22	AAB68141	Peptide derived fr
37	59	41.3	14	22	AAB68173	Peptide derived fr
38	59	41.3	161	22	ABG04119	Novel human diagno
39	59	41.3	161	22	ABG04122	Novel human diagno
40	56.5	39.5	123	22	AAU50148	Propionibacterium
41	55.5	38.8	368	21	AAB19523	G protein coupled
42	55.5	38.8	368	21	AAY71293	Human orphan G pro
43	55.5	38.8	368	21	AAB02827	Human G protein co
44	55.5	38.8	368	22	AAU10303	G-protein coupled
45	55.5	38.8	368	22	AAG64288	Human GTP-binding

ALIGNMENTS

RESULT 1
AAB92074
ID AAB92074 standard; Peptide; 32 AA.
XX
AC AAB92074;
XX
DT 22-JUN-2001 (first entry)
XX
DE Inhibin peptide SEQ ID NO:1250.
XX
KW Protection; endogenous therapeutic peptide; peptidase; conjugation;
KW blood component; modification; succinimidyl; maleimido group; amino;
KW hydroxyl; thiol; hormone; growth factor; neurotransmitter.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200069900-A2.
XX
PD 23-NOV-2000.
XX
PF 17-MAY-2000; 2000WO-US13576.
XX
PR 17-MAY-1999; 99US-0134406.
PR 10-SEP-1999; 99US-0153406.
PR 15-OCT-1999; 99US-0159783.
XX
PA (CONJ-) CONJUCHEM INC.
XX
PI Bridon DP, Ezrin AM, Milner PG, Holmes DL, Thibaudeau K;
XX
DR WPI; 2001-112059/12.
XX

```
PT   Modifying and attaching therapeutic peptides to albumin prevents
PT   peptidase degradation, useful for increasing length of in vivo activity
PT   -
XX
PS   Disclosure; Page 603-604; 733pp; English.
XX
CC   The present invention describes a modified therapeutic peptide (I)
CC   comprising a therapeutically active amino acid region (III) and a
CC   reactive group (II) (e.g. succinimidyl and maleimido groups) attached to
CC   a less therapeutically active amino acid region (IV), which covalently
CC   bonds with amino/hydroxyl/thiol groups on blood components to form a
CC   peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
CC   (I) are useful for modifying therapeutic peptides e.g. hormones, growth
CC   factors and neurotransmitters, to protect them from peptidase activity
CC   in vivo for the treatment of various disorders. Endogenous therapeutic
CC   peptides are not suitable as drug candidates as they require frequent
CC   administration due to rapid degradation by peptidases in the body.
CC   Modifying and attaching therapeutic peptides to albumin prevents or
CC   reduces the action of peptidases to increase length of activity (half
CC   life) and specificity as bonding to large molecules decreases
CC   intracellular uptake and interference with physiological processes.
CC   AAB90829 to AAB92441 represent peptides which can be used in the
CC   exemplification of the present invention.
XX
SQ   Sequence   32 AA;

  Query Match             100.0%;  Score 143;  DB 22;  Length 32;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-12;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db       8 PWSPSALRLLQRPPEEPAAHANCHR 32


RESULT 2
AAB92075
ID   AAB92075 standard; Peptide; 33 AA.
XX
AC   AAB92075;
XX
DT   22-JUN-2001  (first entry)
XX
DE   Inhibin peptide SEQ ID NO:1251.
XX
KW   Protection; endogenous therapeutic peptide; peptidase; conjugation;
KW   blood component; modification; succinimidyl; maleimido group; amino;
KW   hydroxyl; thiol; hormone; growth factor; neurotransmitter.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
PN   WO200069900-A2.
XX
PD   23-NOV-2000.
XX
PF   17-MAY-2000; 2000WO-US13576.
XX
PR   17-MAY-1999;   99US-0134406.
PR   10-SEP-1999;   99US-0153406.
PR   15-OCT-1999;   99US-0159783.
XX
PA   (CONJ-) CONJUCHEM INC.
XX
PI   Bridon DP,  Ezrin AM,  Milner PG,  Holmes DL,  Thibaudeau K;
XX
DR   WPI; 2001-112059/12.
XX
PT   Modifying and attaching therapeutic peptides to albumin prevents
PT   peptidase degradation, useful for increasing length of in vivo activity
PT   -
XX
PS   Disclosure; Page 604; 733pp; English.
XX
CC   The present invention describes a modified therapeutic peptide (I)
CC   comprising a therapeutically active amino acid region (III) and a
CC   reactive group (II) (e.g. succinimidyl and maleimido groups) attached to
CC   a less therapeutically active amino acid region (IV), which covalently
CC   bonds with amino/hydroxyl/thiol groups on blood components to form a
CC   peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
CC   (I) are useful for modifying therapeutic peptides e.g. hormones, growth
CC   factors and neurotransmitters, to protect them from peptidase activity
CC   in vivo for the treatment of various disorders. Endogenous therapeutic
CC   peptides are not suitable as drug candidates as they require frequent
CC   administration due to rapid degradation by peptidases in the body.
CC   Modifying and attaching therapeutic peptides to albumin prevents or
CC   reduces the action of peptidases to increase length of activity (half
CC   life) and specificity as bonding to large molecules decreases
CC   intracellular uptake and interference with physiological processes.
CC   AAB90829 to AAB92441 represent peptides which can be used in the
CC   exemplification of the present invention.
XX
SQ   Sequence   33 AA;

  Query Match             100.0%;  Score 143;  DB 22;  Length 33;
  Best Local Similarity   100.0%;  Pred. No. 3.3e-12;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db       9 PWSPSALRLLQRPPEEPAAHANCHR 33


RESULT 3
AAP80018
ID   AAP80018 standard; Protein; 134 AA.
XX
AC   AAP80018;
XX
DT   28-JAN-1993  (first entry)
XX
DE   Sequence of the 18K alpha-chain of a protein exhibiting
DE   inhibin activity.
XX
KW   Fertility control; inhibin; follicle stimulating hormone; inhibitor;
KW   gonadotropin.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 55
FT                   /label= 1,R
XX
PN   US4737578-A.
XX
PD   12-APR-1988.
XX
PF   07-APR-1986;   86US-0848924.
XX
PR   07-APR-1986;   86US-0848924.
PR   10-FEB-1986;   86US-0828435.
XX
PA   (SALK ) SALK INST FOR BIOL STUD.
XX
PI   Evans RM,  Rosenfeld MG,  Cerelli G,  Mayo KE,  Spiess J;
PI   Rivier JEF,  Vale WW;
XX
DR   WPI; 1988-119128/17.
XX
PT   New proteins with inhibin activity - esp. useful for controlling
PT   fertility in males
XX
PS   Claim 1; Column 7; 6pp; English.
XX
CC   The inventors claim 2 proteins - A and B - each of which has a
CC   molecular weight of about 32K and is comprised of an alpha (18K) and
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CC   a beta (14K) chain of human inhibin.  The alpha chain is AAP80018.
CC   The beta chain is either AAP80019 or AAP80020.  Proteins A and B are
CC   useful for regulating fertility of mammals.  Each 32K protein
CC   exhibits inhibin activity in basal secretion of FHS but not
CC   inhibiting basal secretion of luteinizing hormone (LH).
XX
SQ   Sequence   134 AA;

  Query Match           100.0%;  Score 143;  DB 9;  Length 134;
  Best Local Similarity  100.0%;  Pred. No. 1.4e-11;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db       8 PWSPSALRLLQRPPEEPAAHANCHR 32


RESULT 4
AAB68139
ID   AAB68139 standard; Protein; 134 AA.
XX
AC   AAB68139;
XX
DT   09-JUL-2001  (first entry)
XX
DE   Amino acid sequence of an alphaC fragment of human inhibin.
XX
KW   AlphaC portion; inhibin; alpha-subunit; glycoprotein;
KW   follicle stimulating hormone; FSH; cancer.
XX
OS   Homo sapiens.
XX
PN   WO200129079-A1.
XX
PD   26-APR-2001.
XX
PF   18-OCT-2000; 2000WO-AU01258.
XX
PR   18-OCT-1999;   99AU-0003485.
PR   03-AUG-2000; 2000AU-0009162.
XX
PA   (PRIN-) PRINCE HENRY'S INST MEDICAL RES.
PA   (GROO/) GROOME N P.
XX
PI   Groome NP,  Milne-Robertson DM,  Stanton PG,  Cahir NP;
XX
DR   WPI; 2001-308476/32.
DR   N-PSDB; AAF84904.
XX
PT   Immuno-interactive fragments of alpha-C portion of mammalian inhibin
PT   alpha-subunit used to, e.g. produce antigen-binding molecules for
PT   diagnosing cancer -
XX
PS   Claim 5; Page 139; 159pp; English.
XX
CC   The present sequence represents an alphaC portion of a human inhibin
CC   alpha-subunit. Inhibin is a dimeric glycoprotein which is able to
CC   inhibit the secretion of follicle stimulating hormone (FSH) by the
CC   pituitary. Immuno-interactive fragments of the alphaC portion of inhibin
CC   alpha-subunit are used to raise antibodies. The antibodies are used to
CC   diagnose cancer of tissues in the ovary, uterus, breast, pituitary,
CC   testis, or prostate. The antibodies may be used in immunoassays such
CC   as radio-immunoassays, affinity chromatography in isolating a natural
CC   or recombinant mammalian inhibin, and for screening expression
CC   libraries for variant polypeptides.
XX
SQ   Sequence   134 AA;

  Query Match           100.0%;  Score 143;  DB 22;  Length 134;
  Best Local Similarity  100.0%;  Pred. No. 1.4e-11;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db       8 PWSPSALRLLQRPPEEPAAHANCHR 32


RESULT 5
AAM51942
ID   AAM51942 standard; protein; 134 AA.
XX
AC   AAM51942;
XX
DT   01-FEB-2002  (first entry)
XX
DE   Human TGFbeta protein superfamily protein Inh-9.
XX
KW   Human; TGFbeta; transforming growth factor beta; mutant; antagonist;
KW   agonist; ectopic bone formation; psoriasis; muscular atrophy; scar;
KW   formation; fibrosis; cirrhosis; osteopathic; antipsoriatic;
KW   antifibrotic; hepatotropic; vulnerary; Inh-9.
XX
OS   Homo sapiens.
XX
PN   DE10026713-A1.
XX
PD   06-DEC-2001.
XX
PF   30-MAY-2000; 2000DE-1026713.
XX
PR   30-MAY-2000; 2000DE-1026713.
XX
PA   (SEBA/) SEBALD W.
XX
PI   Sebald W,  Nickel J;
XX
DR   WPI; 2002-042559/06.
XX
PT   New mutein of transforming growth factor-beta superfamily protein,
PT   useful for treating or preventing e.g. ectopic bone formation, competes
PT   for receptor binding -
XX
PS   Disclosure; Fig 6; 54pp; German.
XX
CC   The present invention relates to muteins of a chain of a protein which,
CC   when in the form of a homodimer, has antagonistic or partial agonistic
CC   activity, and where the mutation results in the protein binding with low
CC   affinity to its receptor. The protein is a member of the transforming
CC   growth factor beta (TGFbeta) superfamily. The mutant sequences of the
CC   invention can be used in the treatment of diseases associated with the
CC   overexpression of TGFbeta family proteins, including ectopic bone
CC   formation, psoriasis, muscular atrophy, scar formation, fibrosis and
CC   cirrhosis. The present sequence is the human Inh-9 protein.
XX
SQ   Sequence   134 AA;

  Query Match           100.0%;  Score 143;  DB 23;  Length 134;
  Best Local Similarity  100.0%;  Pred. No. 1.4e-11;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db       8 PWSPSALRLLQRPPEEPAAHANCHR 32


RESULT 6
AAP70202
ID   AAP70202 standard; protein; 351 AA.
XX
AC   AAP70202;
XX
DT   09-APR-1991  (first entry)
XX
DE   Sequence of human inhibin alpha-chain precursor.
XX
KW   Fertility control; contraception; hormone; spermatogenesis.
```

```
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Active-site     312..313
FT                   /note="putative dibasic processing site"
FT   Modified-site   131..133
FT                   /note="potential N-linked glycosylation sites"
FT   Modified-site   253..255
FT                   /note="as above"
FT   Modified-site   287..289
FT                   /note="as above"
FT   Region          1..16
FT                   /note="signal sequence"
FT   Region          17..117
FT                   /note="pro region"
FT   Protein         118..351
FT   Cleavage-site   116..117
FT                   /note="proteolytic processing site"
XX
PN   EP222491-A.
XX
PD   20-MAY-1987.
XX
PF   02-OCT-1986;   86EP-0307586.
XX
PR   12-SEP-1986;   86US-0906729.
PR   03-OCT-1985;   85US-0783910.
PR   10-FEB-1986;   86US-0827710.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Mason AJ,  Seeburg PH;
XX
DR   WPI; 1987-137512/20.
DR   N-PSDB; AAN70314.
XX
PT   Recombinant human or porcine inhibin or activin - used for
PT   modulating clinical condition or reproductive physiology of
PT   animals.
XX
PS   Disclosure; Fig 6A; 48pp; English.
XX
CC   A compsn. comprising human or porcine inhibin which is completely
CC   free of unidentified or porcine proteins is claimed.  Also claimed
CC   are non chromosomal DNA encoding inhibin-alpha or an inhibin-beta
CC   chain.  Sequencing of inhibin-encoding cDNA has led to the
CC   identification of prodomain regions located N-terminal to the
CC   mature inhibin chains that represent coordinately expressed
CC   biologically active polypeptides.  The prodomain regions or
CC   prodomain immunogens are useful in monitoring preproinhibin
CC   processing in transformant cell culture or in experiments directed
CC   at modulating the clinical condt. or reproductive physiology of
CC   animals.
XX
SQ   Sequence   351 AA;

  Query Match             100.0%;  Score 143;  DB 8;  Length 351;
  Best Local Similarity   100.0%;  Pred. No. 3.6e-11;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db     225 PWSPSALRLLQRPPEEPAAHANCHR 249


RESULT 7
AAP60519
ID   AAP60519 standard; Protein; 366 AA.
XX
AC   AAP60519;
XX
DT   26-JUN-1991  (first entry)
XX
DE   Sequence of human inhibin A subunit.
XX
KW   Hormone; inhibin agonist; antagonist; reproductive; gonad.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Region          1..232
FT                   /note= "claimed"
FT   Region          52..232
FT                   /note= "claimed"
FT   Region          62..232
FT                   /note= "claimed"
FT   Peptide         1..61
FT   Protein         62..365
XX
PN   WO8606076-A.
XX
PD   23-OCT-1986.
XX
PF   14-APR-1986;   86WO-AU00097.
XX
PR   20-DEC-1985;   85AU-0003961.
PR   18-APR-1985;   85AU-0000194.
PR   06-SEP-1985;   85AU-0002320.
PR   29-OCT-1985;   85AU-0003157.
PR   19-DEC-1985;   85AU-0003960.
PR   01-JAN-1986;   86AU-0059039.
PR   02-APR-1987;   87AU-0071015.
PR   05-MAY-1986;   86CN-0103459.
XX
PA   (BIOT-) BIOTECHN AUSTR PTY.
PA   (MONU ) MONASH UNIV.
PA   (HENR-) PRICE HENRY'S HOSPITAL.
PA   (SVIN-) ST VINCENTS'S INST MED RE.
XX
PI   Forage R,  Stewart A,  Robertson D,  Dekretser DM;
XX
DR   WPI; 1986-291647/44.
DR   N-PSDB; AAN60428.
XX
PT   New polynucleotide sequences and recombinant DNA - encoding
PT   inhibin and synthetic peptides useful for affecting gonadal
PT   function
XX
PS   Disclosure; Fig 7; 71pp; English.
XX
CC   DNA encoding inhibin and inhibin or part, analogues, homologues or
CC   precursors thereof when produced by recombinant techniques are also
CC   claimed, as well as pharmaceutical compositions thereof. These may
CC   be used as an inhibin agonist, antagonist or for eliciting an
CC   antigenic response to affect gonadal function or reproductive
CC   physiology.
XX
SQ   Sequence   366 AA;

  Query Match             100.0%;  Score 143;  DB 7;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-11;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db     240 PWSPSALRLLQRPPEEPAAHANCHR 264


RESULT 8
AAP83167
ID   AAP83167 standard; Protein; 366 AA.
XX
AC   AAP83167;
XX
DT   28-JAN-1993  (first entry)
```

```
XX
DE   Sequence of the 18K alpha-chain of a protein exhibiting
DE   inhibin activity and its N-terminal sequence.
XX
KW   Fertility control; inhibin; follicle stimulating hormone; inhibitor;
KW   gonadotropin.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Region          1..232
FT                   /label= N-terminal
FT   Region          233..366
FT                   /label= alpha chain
FT                   /note= "claimed"
XX
PN   US4737578-A.
XX
PD   12-APR-1988.
XX
PF   07-APR-1986;    86US-0848924.
XX
PR   07-APR-1986;    86US-0848924.
PR   10-FEB-1986;    86US-0828435.
XX
PA   (SALK ) SALK INST FOR BIOL STUD.
XX
PI   Evans RM,  Rosenfeld MG,  Cerelli G,  Mayo KE,  Spiess J;
PI   Rivier JEF,  Vale WW;
XX
DR   WPI; 1988-119128/17.
DR   N-PSDB; AAN80040.
XX
PT   New proteins with inhibin activity - esp. useful for controlling
PT   fertility in males
XX
PS   Disclosure; Table 1, page 6-7; 6pp; English.
XX
CC   The inventors claim 2 proteins - A and B - each of which has a
CC   molecular weight of about 32K and is comprised of an alpha (18K) and
CC   a beta (14K) chain of human inhibin.  The alpha chain is AAP80018.
CC   The beta chain is either AAP80019 or AAP80020.  Proteins A and B are
CC   useful for regulating fertility of mammals.  Each 32K protein
CC   exhibits inhibin activity in basal secretion of FHS but not
CC   inhibiting basal secretion of luteinizing hormone (LH).
XX
SQ   Sequence   366 AA;

  Query Match             100.0%;  Score 143;  DB 9;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-11;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db     240 PWSPSALRLLQRPPEEPAAHANCHR 264


RESULT 9
AAY92015
ID   AAY92015 standard; Protein; 366 AA.
XX
AC   AAY92015;
XX
DT   19-JUL-2000  (first entry)
XX
DE   Human inhibin A alpha subunit.
XX
KW   human inhibin A alpha subunit; CKGF; mutant; cystine knot growth factor;
KW   hairpin loop; infertility.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 1..265
FT                   /note= "optionally mutated to increase electrostatic
FT                           interaction between beta hairpin structure and
FT                           a receptor"
FT   Domain          266..286
FT                   /label= beta_hairpin_loop_1
FT                   /note= "mutant optionally comprises one or more
FT                           substitutions in these residues"
FT   Misc-difference 287..331
FT                   /note= "optionally mutated to increase electrostatic
FT                           interaction between beta hairpin structure and
FT                           a receptor"
FT   Domain          332..359
FT                   /label= beta_hairpin_loop_3
FT                   /note= "mutant optionally comprises one or more
FT                           substitutions in these residues"
FT   Misc-difference 360..366
FT                   /note= "optionally mutated to increase electrostatic
FT                           interaction between beta hairpin structure and
FT                           a receptor"
XX
PN   WO200017360-A1.
XX
PD   30-MAR-2000.
XX
PF   19-MAR-1999;    99WO-US05908.
XX
PR   22-SEP-1998;    98WO-US19772.
XX
PA   (UYMA-) UNIV MARYLAND BALTIMORE.
XX
PI   Weintraub BD,  Szkudlinski MW;
XX
DR   WPI; 2000-283585/24.
XX
PT   New mutant cystine knot growth factor proteins comprising one or more
PT   mutant subunits, useful for treating or preventing diseases e.g.
PT   hypothyroidism and thyroid cancer
XX
PS   Claim 268; Page 303; 320pp; English.
XX
CC   This is the wild type human inhibin A alpha subunit.
CC   Mutants comprise at least one electrostatic charge altering mutation in a
CC   beta hairpin loop, resulting in increased bioactivity.
CC   Mutant cystine knot growth factor (CKGF) proteins comprising one or more
CC   mutant subunits and having novel properties or improved pharmacological
CC   properties, compared to wild type CKGFs, are claimed.  The CKGF
CC   superfamily comprises at least four families of growth factors: the
CC   glycoprotein hormones, the platelet-derived growth factor (PDGF) family,
CC   the neurotrophins and the transforming growth factor-beta family; the
CC   families are known to be structurally similar (especially comprising the
CC   cystine knot topology) and it was shown that mutations at certain
CC   positions in the CKGF hairpin loops of family members and other members
CC   of the CKGF superfamily could significantly alter the biological
CC   activities of the CKGF.
CC   Mutant transforming growth factor family proteins or analogues are useful
CC   for treatment of ovulatory dysfunction, luteal phase defect, unexplained
CC   infertility, time-limited conception and in assisted reproduction.
XX
SQ   Sequence   366 AA;

  Query Match             100.0%;  Score 143;  DB 21;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-11;
  Matches   25;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           |||||||||||||||||||||||||
Db     240 PWSPSALRLLQRPPEEPAAHANCHR 264


RESULT 10
AAR12087
ID   AAR12087 standard; peptide; 33 AA.
```

```
XX
AC   AAR12087;
XX
DT   01-AUG-1991  (first entry)
XX
DE   N-terminal of 18 kD subunit of ovine inhibin.
XX
KW   Follicle stimulating hormone; FSH; luteinising hormone; LH;
KW   fertility; gonadotropin.
XX
OS   Ovis aries.
XX
PN   US5015729-A.
XX
PD   14-MAY-1991.
XX
PF   23-JUN-1988;   88US-0210683.
XX
PR   23-JUN-1988;   88US-0210683.
PR   24-JUN-1986;   86US-0878063.
XX
PA   (SALK ) SALK INST FOR BIOL STUD.
XX
PI   Spiess J,  Rivier JEF,  Bardin CW,  Vale WW;
XX
DR   WPI; 1991-163615/22.
XX
PT   Pure ovine inhibin protein - which inhibits secretion of follicle
PT   stimulating hormone while not inhibiting secretion of luteinising
PT   hormone.
XX
PS   Claim 1; Page 11; 11pp; English.
XX
CC   The sequence is the N-terminal of the 18 kD subunit of the ovine
CC   inhibin dimer. The protein specifically inhibits basal secretion of
CC   follicle stimulating hormone (FSH) but not that of luteinising
CC   hormone (LH).  It can be admin. to mammals for control of fertility,
CC   gonadotropin secretion  or sex hormone prodn. Admin decreases
CC   fertility in females and decreases spermatogenesis in males.  The
CC   protein can also be used to diagnose infertility.  Antibodies raised
CC   against the protein acn neutralise the activity and could be used in
CC   immunisation to block endogenous secretion of inhibin, elevating
CC   endogenopus gonadotropin secretion.  The protein was purified from
CC   ram rete testis fluid by a combination of gel filtration and
CC   reverse phase HPLC.  See also  AAR12088.
XX
SQ   Sequence   33 AA;

  Query Match             94.4%;  Score 135;  DB 12;  Length 33;
  Best Local Similarity   92.0%;  Pred. No. 3.9e-11;
  Matches   23;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           ||||:||||||||||||||||:|||
Db       8 PWSPAALRLLQRPPEEPAAHADCHR 32


RESULT 11
AAP60517
ID   AAP60517 standard; Protein; 360 AA.
XX
AC   AAP60517;
XX
DT   26-JUN-1991  (first entry)
XX
DE   Sequence of bovine inhibin A subunit.
XX
KW   Hormone; inhibin agonist; antagonist; reproductive; gonad.
XX
OS   Bos taurus.
XX
FH   Key             Location/Qualifiers
FT   Region          1..226
FT                   /note= "claimed"
FT   Region          51..226
FT                   /note= "claimed"
FT   Region          61..226
FT                   /note= "claimed"
FT   Peptide         1..60
FT   Protein         61..360
XX
PN   WO8606076-A.
XX
PD   23-OCT-1986.
XX
PF   14-APR-1986;   86WO-AU00097.
XX
PR   20-DEC-1985;   85AU-0003961.
PR   18-APR-1985;   85AU-0000194.
PR   06-SEP-1985;   85AU-0002320.
PR   29-OCT-1985;   85AU-0003157.
PR   19-DEC-1985;   85AU-0003960.
PR   01-JAN-1986;   86AU-0059039.
PR   02-APR-1987;   87AU-0071015.
PR   05-MAY-1986;   86CN-0103459.
XX
PA   (BIOT-) BIOTECHN AUSTR PTY.
PA   (MONU ) MONASH UNIV.
PA   (HENR-) PRICE HENRY'S HOSPITAL.
PA   (SVIN-) ST VINCENTS'S INST MED RE.
XX
PI   Forage R,  Stewart A,  Robertson D,  Dekretser DM;
XX
DR   WPI; 1986-291647/44.
DR   N-PSDB; AAN60426.
XX
PT   New polynucleotide sequences and recombinant DNA - encoding
PT   inhibin and synthetic peptides useful for affecting gonadal
PT   function
XX
PS   Disclosure; Fig 5; 71pp; English.
XX
CC   DNA encoding inhibin and inhibin or part, analogues, homologues or
CC   precursors thereof when produced by recombinant techniques are also
CC   claimed, as well as pharmaceutical compositions thereof. These may
CC   be used as an inhibin agonist, antagonist or for eliciting an
CC   antigenic response to affect gonadal function or reproductive
CC   physiology.
XX
SQ   Sequence   360 AA;

  Query Match             94.4%;  Score 135;  DB 7;  Length 360;
  Best Local Similarity   92.0%;  Pred. No. 4.4e-10;
  Matches   23;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           ||||:||||||||||||||||:|||
Db     234 PWSPAALRLLQRPPEEPAAHADCHR 258


RESULT 12
AAB92078
ID   AAB92078 standard; Peptide; 32 AA.
XX
AC   AAB92078;
XX
DT   22-JUN-2001  (first entry)
XX
DE   Inhibin peptide SEQ ID NO:1254.
XX
KW   Protection; endogenous therapeutic peptide; peptidase; conjugation;
KW   blood component; modification; succinimidyl; maleimido group; amino;
KW   hydroxyl; thiol; hormone; growth factor; neurotransmitter.
XX
OS   Homo sapiens.
OS   Synthetic.
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XX
PN   WO200069900-A2.
XX
PD   23-NOV-2000.
XX
PF   17-MAY-2000; 2000WO-US13576.
XX
PR   17-MAY-1999;   99US-0134406.
PR   10-SEP-1999;   99US-0153406.
PR   15-OCT-1999;   99US-0159783.
XX
PA   (CONJ-) CONJUCHEM INC.
XX
PI   Bridon DP,  Ezrin AM,  Milner PG,  Holmes DL,  Thibaudeau K;
XX
DR   WPI; 2001-112059/12.
XX
PT   Modifying and attaching therapeutic peptides to albumin prevents
PT   peptidase degradation, useful for increasing length of in vivo activity
PT   -
XX
PS   Disclosure; Page 605; 733pp; English.
XX
CC   The present invention describes a modified therapeutic peptide (I)
CC   comprising a therapeutically active amino acid region (III) and a
CC   reactive group (II) (e.g. succinimidyl and maleimido groups) attached to
CC   a less therapeutically active amino acid region (IV), which covalently
CC   bonds with amino/hydroxyl/thiol groups on blood components to form a
CC   peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
CC   (I) are useful for modifying therapeutic peptides e.g. hormones, growth
CC   factors and neurotransmitters, to protect them from peptidase activity
CC   in vivo for the treatment of various disorders. Endogenous therapeutic
CC   peptides are not suitable as drug candidates as they require frequent
CC   administration due to rapid degradation by peptidases in the body.
CC   Modifying and attaching therapeutic peptides to albumin prevents or
CC   reduces the action of peptidases to increase length of activity (half
CC   life) and specificity as bonding to large molecules decreases
CC   intracellular uptake and interference with physiological processes.
CC   AAB90829 to AAB92441 represent peptides which can be used in the
CC   exemplification of the present invention.
XX
SQ   Sequence   32 AA;

  Query Match             91.6%;  Score 131;  DB 22;  Length 32;
  Best Local Similarity   88.0%;  Pred. No. 1.3e-10;
  Matches   22;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           ||||:|||||||||||||| ||:|||
Db       8 PWSPAALRLLQRPPEEPAVHADCHR 32


RESULT 13
AAB92079
ID   AAB92079 standard; Peptide; 33 AA.
XX
AC   AAB92079;
XX
DT   22-JUN-2001  (first entry)
XX
DE   Inhibin peptide SEQ ID NO:1255.
XX
KW   Protection; endogenous therapeutic peptide; peptidase; conjugation;
KW   blood component; modification; succinimidyl; maleimido group; amino;
KW   hydroxyl; thiol; hormone; growth factor; neurotransmitter.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
PN   WO200069900-A2.
XX
PD   23-NOV-2000.
XX
PF   17-MAY-2000; 2000WO-US13576.
XX
PR   17-MAY-1999;   99US-0134406.
PR   10-SEP-1999;   99US-0153406.
PR   15-OCT-1999;   99US-0159783.
XX
PA   (CONJ-) CONJUCHEM INC.
XX
PI   Bridon DP,  Ezrin AM,  Milner PG,  Holmes DL,  Thibaudeau K;
XX
DR   WPI; 2001-112059/12.
XX
PT   Modifying and attaching therapeutic peptides to albumin prevents
PT   peptidase degradation, useful for increasing length of in vivo activity
PT   -
XX
PS   Disclosure; Page 606; 733pp; English.
XX
CC   The present invention describes a modified therapeutic peptide (I)
CC   comprising a therapeutically active amino acid region (III) and a
CC   reactive group (II) (e.g. succinimidyl and maleimido groups) attached to
CC   a less therapeutically active amino acid region (IV), which covalently
CC   bonds with amino/hydroxyl/thiol groups on blood components to form a
CC   peptidase stabilised therapeutic peptide composed of 3-50 amino acids.
CC   (I) are useful for modifying therapeutic peptides e.g. hormones, growth
CC   factors and neurotransmitters, to protect them from peptidase activity
CC   in vivo for the treatment of various disorders. Endogenous therapeutic
CC   peptides are not suitable as drug candidates as they require frequent
CC   administration due to rapid degradation by peptidases in the body.
CC   Modifying and attaching therapeutic peptides to albumin prevents or
CC   reduces the action of peptidases to increase length of activity (half
CC   life) and specificity as bonding to large molecules decreases
CC   intracellular uptake and interference with physiological processes.
CC   AAB90829 to AAB92441 represent peptides which can be used in the
CC   exemplification of the present invention.
XX
SQ   Sequence   33 AA;

  Query Match             91.6%;  Score 131;  DB 22;  Length 33;
  Best Local Similarity   88.0%;  Pred. No. 1.3e-10;
  Matches   22;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           ||||:|||||||||||||| ||:|||
Db       9 PWSPAALRLLQRPPEEPAVHADCHR 33


RESULT 14
AAP71175
ID   AAP71175 standard; protein; 144 AA.
XX
AC   AAP71175;
XX
DT   20-MAY-1991  (first entry)
XX
DE   First protein chain of a 32 kDa FSH secretion-inhibitor.
XX
KW   FSH secretion-inhibitor; contraceptive; infertility diagnosis.
XX
OS   Sus scrofa.
XX
PN   WO8700528-A.
XX
PD   29-JAN-1987.
XX
PF   17-JUL-1986;   86WO-US01505.
XX
PR   03-OCT-1985;   85US-0784436.
PR   18-JUL-1985;   85US-0756866.
XX
PA   (SALK ) SALK INST FOR BIOL STUD.
XX
PI   Ling NCK,  Ying SY,  Esch FS,  Guillemin RCL;
```

```
XX
DR   WPI; 1987-037245/05.
XX
PT   New protein which specifically inhibits basal secretion of FSH
PT   - isolated from porcine follicular fluid, useful as male
PT   contraceptive.
XX
PS   Claim 8; Page 22; 35pp; English.
XX
CC   The protein sequence encodes the 18 kDa first chain of the 32 kDa
CC   FSH secretion-inhibitor.  This sequence is linked by disulfide bonds
CC   to a seqeuence (AAP71176 or AAP71177) encoding a second polypeptide of
CC   the FSH secretion-inhibitor.  The complete protein is used for
CC   regulating (decreasing) fertility in mammals, is used as a male
CC   contraceptive and in tests for infertility diagnosis.
XX
SQ   Sequence   134 AA;

  Query Match             91.6%;  Score 131;  DB 8;  Length 134;
  Best Local Similarity   88.0%;  Pred. No. 5.5e-10;
  Matches   22;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           ||||:|||||||||||||| ||:|||
Db       8 PWSPAALRLLQRPPEEPAVHADCHR 32


RESULT 15
AAP70310
ID   AAP70310 standard; protein; 364 AA.
XX
AC   AAP70310;
XX
DT   09-APR-1991  (first entry)
XX
DE   Sequence of porcine inhibin alpha-chain precursor.
XX
KW   Fertility control; contraception; hormone; spermatogenesis.
XX
OS   Sus scrofa domestica.
XX
FH   Key             Location/Qualifiers
FT   Active-site     55..56
FT                   /note="putative dibasic processing sites"
FT   Active-site     59..60
FT                   /note="as above"
FT   Active-site     68..69
FT                   /note="as above"
FT   Modified-site   144..146
FT                   /note="potential N-linked qycosylation sites"
FT   Modified-site   266..268
FT                   /note="as above"
FT   Region          1..230
FT                   /note="used to design a long synthetic DNA probe"
FT   Protein         231..364
FT   Cleavage-site   229..230
FT                   /note="proteolytic processing site"
FT   Region          232..252
FT                   /note="( basis of probe AAN71184)"
XX
PN   EP222491-A.
XX
PD   20-MAY-1987.
XX
PF   02-OCT-1986;   86EP-0307586.
XX
PR   12-SEP-1986;   86US-0906729.
PR   03-OCT-1985;   85US-0783910.
PR   10-FEB-1986;   86US-0827710.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Mason AJ,  Seeburg PH;
XX
DR   WPI; 1987-137512/20.
DR   N-PSDB; AAN70310.
XX
PT   Recombinant human or porcine inhibin or activin - used for
PT   modulating clinical condition or reproductive physiology of
PT   animals.
XX
PS   Disclosure; Fig 1B; 48pp; English.
XX
CC   A compsn. comprising human or porcine inhibin which is completely
CC   free of unidentified or porcine proteins is claimed.  Also claimed
CC   are non chromosomal DNA encoding inhibin-alpha or an inhibin-beta
CC   chain.  Sequencing of inhibin-encoding cDNA has led to the
CC   identification of prodomain regions located N-terminal to the
CC   mature inhibin chains that represent coordinately expressed
CC   biologically active polypeptides.  The prodomain regions or
CC   prodomain immunogens are useful in monitoring preproinhibin
CC   processing in transformant cell culture or in experiments directed
CC   at modulating the climical condt. or reproductive physiology of
CC   animals.
XX
SQ   Sequence   364 AA;

  Query Match             91.6%;  Score 131;  DB 8;  Length 364;
  Best Local Similarity   88.0%;  Pred. No. 1.5e-09;
  Matches   22;  Conservative    2;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 PWSPSALRLLQRPPEEPAAHANCHR 25
           ||||:|||||||||||||| ||:|||
Db     238 PWSPAALRLLQRPPEEPAVHADCHR 262


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